Changes in the Earnings Distribution in Slovenia during Rapid Growth, 1991-2005

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August 2008

1. Introduction

Central and Eastern European countries have undergone profound political, economic and social transformations during the 1990s. One of the consequences of such transformations was a large increase in income inequality. This is quite understandable; in the socialist and communist regimes wages were mostly set administratively, so that wage dispersion was quite compressed. With a dismantling of the old regime, market forces became a more decisive factor in wage setting and this invariably resulted in an increase in wage inequality. Of course, an analysis of inequality of market incomes does not provide the whole picture, as the increase in inequality of market incomes was moderated by the progressive personal income tax and by the system of social transfers. In this sense, an analysis of the inequality of disposable income provides a better indication of the changes in welfare levels. Here, households have to be taken as the unit of analysis.

The analysis which we present here is confined to incomes of wage-earners, of which earnings represent close to 98 per cent. Other active persons, such as self-employed, farmers, occasional workers and unpaid family members will not be included in the analysis. So, clearly, we will not be getting the whole "story" of income growth and income inequality. Blinder (1993, p. 308), referring to the US, said that "if you want to understand the rise in income inequality in the 1980s, the place to start is with the rise in wage inequality". Atkinson (1998, p. 19) commented on Blinder's remark, stating: "I agree, but one should not stop here". While we certainly agree with Atkinson's remark, we reiterate that we will not move much further from the analysis of wage inequality, with the additional exploration of the effects of the personal income tax and mandatory social contributions on the after-tax income of wage earners.

2. The Data Sources

We have at our disposal three data sources on wages, two of which are not generally available, but were obtained from the Statistical Office of the Republic of Slovenia (SORS) and the Tax Authority of the Republic of Slovenia (TARS).

Data source A

This data source was obtained from the SORS and consists of tabulated data of total annual income (subdivided into 10 different income categories). There are 15 income brackets. For this grouping, the SORS used the personal income tax database and the statistical registry of the active population, for which the SORS is the "custodian". Only persons fulfilling the following criteria were considered: (1) employed full-time (meaning that information in the registry stated that they worked at least 36 hours per week) and (2) employed with the same employer throughout the given year. The data are in the form of tables, with separate tables for employees with regard to the sector of activity (public, private) and gender. Thus, for each year there are four tables (men employed in public sector, women employed in public sector, men employed in private sector, and women employed in private sector). This data source also includes data on withheld PIT and employee social contributions. Data are available from 1993 onwards.

Data source B

This data source was obtained from the Tax Authority of the Republic of Slovenia. It is a large simple random sample, containing annual data from the personal income tax database. Each sample consists of some 60,000 taxpayers, i.e. some 5 per cent of all PIT taxpayers. The data contain the age of taxpayer, gender, the amount of various income sources, withheld PIT and social contributions. Unlike data source A, data source B also contains the final amount of PIT paid. This data source starts from 1991.

Data source C

This data source is based on the official publication of the SORS, *Rapid Reports: Persons in paid employment by amount of gross earnings and collective agreements.* These reports are published annually and provide the distribution of gross wages for September of each year. The number of income brackets is 20. Only employees who worked full time in September were considered. Gross earnings also include various wage-related disbursements, such as wage compensation for annual leave, sickness pay for the first 30 days[1], and payments for overtime. However, some important wage-related income sources are not included, such as allowance for annual vacation. Also not included are income sources which are not wage related, such as income from contractual work. Up to 2005, the statistical survey did not include (a) private enterprises with at most 2 employees and (2) employees working for self-employed entrepreneurs. Starting from 2005, private enterprises were being included in the survey. It must be mentioned that these two groups of employees are not negligible; in 2005 the first group represented some 5 per cent, whereas the second group represented some 9 per cent of all employees. These surveys of monthly earnings for September of each year have been regularly carried out prior to 1991. However, comparisons between the post-1991 and pre-1991 period are not meaningful, as the concept of "gross wage" did not exist and therefore only net wages were recorded in the pre-1991 (socialist) period.

Clearly, each of the three data sources has its advantages and disadvantages. In view of Atkinson's A/B/C classification (Atkinson, 2007) one is tempted to classify all the three data sources as high-quality data, i.e. as an "A" classification. Of course, none of these data sources are ideal. Data source A looks fine, and offers possibilities for analyzing gender income inequality and inequalities within the public and private sector. However, the series starts from 1993, thus not including the very tumultuous first two years of transition (1991 and 1992); also, it includes only data on withheld PIT and not on final PIT. Data source B includes a sample of all taxpayers, so that wage earners (working full time) would have to be extracted – somehow. Also, employment in the public or private sector can not be ascertained, as there is no "matching" of these data with data from the statistical registry of the active population. On the positive side, these series start with 1991 and also have data on final PIT paid. Data source C appears to be "information-poorest", as it does not include two quite distinct groups of employees. Also, there is no distinction with regard to gender, and it omits some important income sources of wage-earners – such

[1] Sickness allowances from the 31st day on are paid by the National Health Insurance Institute.

as allowance for annual vacation and income from contractual work. A further disadvantage is that data source C does not contain annual data but only data for a given month (September) of each year. In view of these shortcomings, we have opted for an analysis of income inequality based on data sources A and B.

3. A Comparison of Data Sources: Employees and Wages

The official data on number of employees, published in the annual Statistical Yearbooks of the Statistical Office of the Republic of Slovenia includes all employees[2]. Data source A is somewhat more restrictive, as it covers only employees who (1) worked full time, i.e. at least 36 hours per week and (2) were employed with the same employer throughout the year. With regard to data source B, the total number of employees is estimated from the sample. First, employees in the sample of taxpayers for personal income tax are extracted using the following criteria: (1) wage or wage compensation (sick-leave, vacation leave etc.) is greater than zero and (2) allowance for annual vacation is greater than zero. Both criteria have to be fulfilled. What is the significance of including the allowance for annual vacation as the second criterion? This allowance is actually a mandatory fringe benefit, to which all employees are entitled. The minimum annual amount is negotiated between the trade unions and the employer association, and stipulated in collective agreements[3]. This disbursement is in fact "quasi-mandatory" also for employers who are not members of the employer association. If an employee works less than full time, he receives a proportionate share of the minimum annual amount[4]. Similarly, if the employee works with a given employer for three months in a given years, he is entitled to 3/12 of the minimum annual amount of the vacation allowance.

We label the estimated number of employees, based on the extraction from the sample (data source B) and according to the upper two criteria as "B1". This estimate is clearly an estimate of all employees, part-time and full-time. How do we extract full-time employees from our sample of taxpayers? In view of the explanations stated above, the following criteria are imposed: (1) wage or wage compensation is greater than zero and (2) allowance for annual vacation is greater than the minimum annual amount. The estimated number of employees based on the extraction from the sample (data source B) and according to the upper two criteria is labelled "B2". Obviously, criteria which lead to B2 are more restrictive than criteria leading to B1. However, it must be noted that the stricter criterion (for amount of annual vacation allowance) does not necessarily "weed out" all part-time employees, as some categories of part-time workers are entitled to the full annual amount of vacation allowance. The

[2] Since 2005 these data also include owners of firms (actually, one-person firms) who are not insured as self-employed persons. In fact, these persons receive a wage (salary) paid by the owner, i.e. themselves.

[3] There is additional "legal muscle" to the collective agreements, as – starting from 1994 – disbursed amounts of this allowance higher than the minimum amount could not be deducted as expenses for the corporate income tax and – starting from 1998 – amounts higher than the minimum amount were also subject to payment of social contributions.

[4] However, persons employed part-time due to disability are partially wage-compensated by the Institute for Pension and Disability Insurance (IPDI). These persons are entitled to the full minimum annual amount of the vacation allowance. There are some 10 to 15 thousand part-time employees that receive partial compensation from the IPDI – the number varies according to the year (period 1991-2005).

number of employees according to the SORS Statistical Yearbook and according to data source A and the two series (B1 and B2) derived from data source B are shown in table 1.

Table 1. Number of employees according to different data sources, 1991–2005

Year	Statistical Yearbook	A	B1	B2
		as a share of the official number of employees		
1991	746,041		0.881	0.868
1992	692,079		0.901	0.898
1993	665,568	0.788	0.962	0.892
1994	647,336	0.798	0.978	0.933
1995	641,952	0.831	0.997	0.886
1996	634,651	0.831	1.000	0.926
1997	651,226	0.810	0.976	0.893
1998	652,480	0.836	0.976	0.898
1999	670,971	0.840	0.964	0.890
2000	683,042	0.841	0.950	0.868
2001	694,817	0.840	0.956	0.888
2002	697,850	0.830	0.972	0.901
2003	699,146	0.815	0.980	0.910
2004	702,647	0.828	0.990	0.916
2005	731,597	0.814		

Note: The estimated standard error of the estimated number of employees for series B1 and B2 is not provided. For all these annual estimates, it is less than 3,000.

The series presented in table 1 deserve at least a brief comment. Series A is clearly the most restrictive, as it excludes not only employees not employed full-time, but also employees that changed jobs in a given year. The series B1 ought to include all employees – except possibly those whose income is less than the (admittedly low) standard personal exemption in the PIT law. It is consistently lower than the official count of employees, provided by the Statistical Office of the Republic of Slovenia. Possible explanations are that either (a) the official count of employees by the Statistical Office is consistently over-estimating the actual number of employees that are receiving wages and wage-related allowances or (b) a number of registered employees receive wages (and wage-related allowances) in cash, and are thus "below the PIT radar screen", meaning that their registered incomes are less than the standard personal PIT exemption. In other words, they are not obliged to file an income tax return.

It is noteworthy that the discrepancy between the official count of employees and the number of employees from series B1 is particularly large in the "cataclysmic" first two years of transition, i.e. in 1991 and 1992. Slovenia declared independence in 1991, followed by the collapse of (hitherto very strong) trade with other Yugoslavian republics. There is evidence that the official count of employees in these years is inflated; one is reminded of Gogol's masterpiece "Dead souls". Circumstantial evidence suggests that quite a few employees did not receive wage compensation at that time, a not unknown phenomenon also in other Central and Eastern European countries. Most of these employees received food coupons and other benefits-in-kind, and thus evaded the PIT net. So, some were working but received food coupons; some

were not working but were still considered employed as they were on the "waiting list", waiting for demand and firm orders to pick up.

The difference between series B1 and B2 in recent years (at least since 1996) is some 50 thousand employees, and this difference can be ascribed to part-time employees. As already stated, even series B2 contains some part-time employees (who receive the full minimum amount of vacation allowance); their number is some 10 to 15 thousand. This gives the estimated total number of part-time workers at 60 to 65 thousand, quite close to official figures[5].

What about wages? The computed average wage from series A and series B1 and B2 is presented in table 2, as a fraction of the official average wage, published by the Statistical Office of the Republic of Slovenia. The official average wage is based on a somewhat restricted set of employees. Thus, only employees employed full time during the whole year are taken into account. Furthermore, in 1991 all employees at private enterprises and employees with the self-employed were not taken into account. During the period 1992–2004 the set was somewhat expanded, so that larger private enterprises (with 3 or more employees) were included. Since 2005 all private enterprises are included, so that the only "excluded" category are employees with the self-employed[6]. Not surprisingly, the estimated average wage based on series B1 and B2 is lower, as the excluded category in the official computation of the average wage – employees with the self-employed – typically has very low wages. It is widely held that these employees receive a large share of their income in cash. Quite understandably, the average wage from series B2 is higher than the average wage from series B1; and is close to the official figure for the average wage.

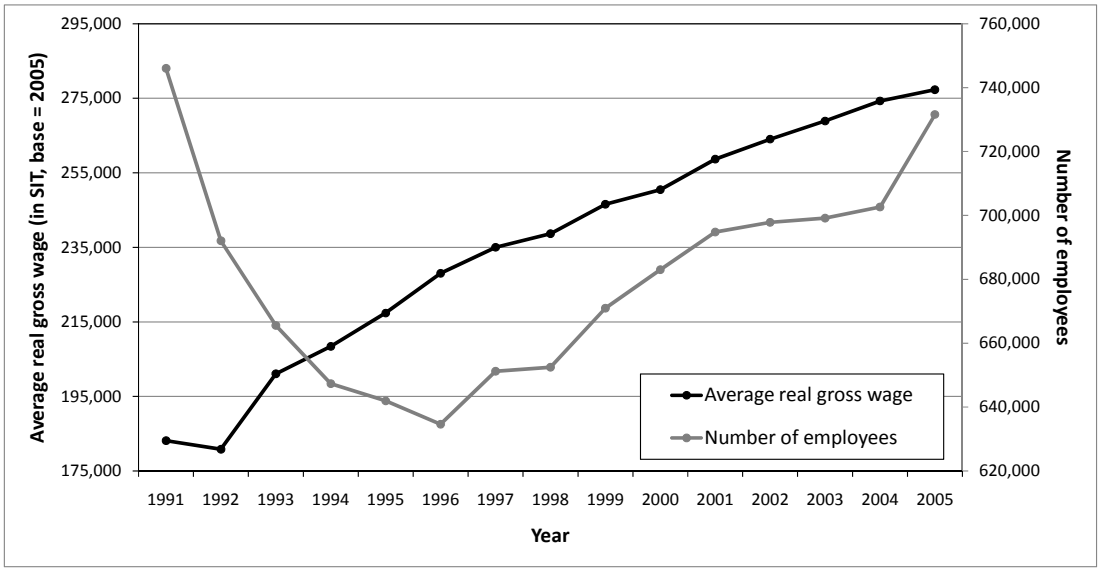
Table 2. Average gross wage according to different data sources, 1991–2005 (in Tolars)

Year	Statistical Yearbook	A	B1	B2
		as a share of the official average gross wage		
1991	16,823		0.983	0.989
1992	51,044		0.971	0.974
1993	75,432	1.027	0.993	1.029
1994	94,618	0.999	0.960	0.986
1995	111,996	0.972	0.949	0.998
1996	129,125	0.957	0.950	0.986
1997	144,251	0.939	0.936	0.974
1998	158,069	0.963	0.938	0.969
1999	173,245	0.961	0.943	0.980
2000	191,669	0.964	0.947	0.986
2001	214,561	0.961	0.936	0.972
2002	235,436	0.966	0.943	0.979
2003	253,200	0.982	0.940	0.981
2004	267,571	0.977	0.942	0.984
2005	277,279	0.993		

[5] See *Employment in Europe 2005*, European Commission, Employment and Social Affairs, Bruxelles.
[6] In 2005, there were some 65 thousand employees with the self-employed.

Regardless of the series – official, A, B1 or B2 – the growth of the average real wage was quite strong, as seen from figure 1, which is base on the official data from the Statistical Yearbook of the Republic of Slovenia.

Figure 1. Average real gross wage and number of employees, 1991–2005



4. Income Sources of Wage Earners

For the analysis of income inequality we will use data source A and data source B1. We decompose the Gini coefficient of income inequality using the well-known formula first derived by Rao (1969):

$$G = \sum s_k C_k ,$$

where G is the Gini coefficient, s_k is the share of income source k in total income, and C_k is the coefficient of concentration of income source k. The decomposition is based on series A, with the income shares presented in table 3 and the concentration coefficients presented in table 4.

As seen from table 3, wages, wage compensations and cost reimbursements accounted for some 90 percent of gross income of wage earners, with the vacation allowance trailing second, accounting for some 5 percent of their gross income. Most of the changes in the income structure can be explained by administrative changes and/or changes in the PIT code. For example, up to 1993, wage compensation for maternity leave was included in the income source *Wages, wage compensation and cost reimbursements*; the employer paid the amount and was later reimbursed by the social insurance institution. Since 1994, these compensations are paid directly by a social insurance institution (Centre for social work) and are included in *Compensations paid by other social insurance institutions*; that is why we observe a fairly large increase in this income category in 1994 and 1995. Another example: hidden beneath the assuming title *Royalties and income from property rights* is form of active (labour) income, a niche for the well-off wage-earners; it was quite attractive due to very

favourable PIT treatment. This tax "treat" was (finally!) clamped down in the 2004 PIT law (effective from 2005), resulting in a virtually extinguishing of this income source in 2005. Also, due to stricter tax regulations and rules, this income source is now mostly included in *Income from contractual work*, and that is probably why *Income from contractual work* experienced such an increase in 2005. Similarly, the larger share of income from capital in 2005 (amounting to some 2 per cent of gross income of wage earners) was doubtlessly caused by new inclusions of capital income in the tax base, according to the 2004 PIT law.

The values of concentration coefficients conform to our expectations. The low value for vacation allowance is due to the fact that not many employers would wish to disburse allowances higher than the minimum amount; they would be severely penalized with higher taxation. In other words, employees receive very similar amounts of this fringe benefit. The income category *Severance pay for retirement, awards, solidarity payments and other wage-related payments* of course does not include many "solidarity" elements. The largest individual item in this category are (quite possibly) fees for attendance of the meetings of various supervisory boards. The large concentration coefficients for *Income from contractual work*, and *Royalties and income from property rights* (which, as we explained, is actually labour income) shows that the well-off have ample means to supplement their already high regular wages and salaries. The income source *Pensions and compensations paid by the Institute for Pension and Disability Insurance* also deserves attention. This income source includes partial income compensations for employees with disability. After the passage of the 1999 pension reform, the generosity of these benefits considerably decreased, particularly for new entrants. However, legal provisions were being applied only starting in 2003, and seriously "kicking-in" only in 2005. This could explain the large decrease of this concentration coefficient in recent years.

Table 3. Structure of gross income of wage earners, taxable persons for PIT, 1993–2005 (series A)

	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Total	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
Wages, wage compensations and cost reimbursements	0.9093	0.9053	0.8878	0.8809	0.8784	0.8864	0.8906	0.8952	0.8962	0.8970	0.8980	0.8928	0.8881
Fringe benefits	0.0023	0.0039	0.0040	0.0046	0.0058	0.0043	0.0043	0.0040	0.0035	0.0033	0.0032	0.0030	0.0048
Allowance for annual vacation	0.0554	0.0502	0.0532	0.0557	0.0537	0.0486	0.0469	0.0447	0.0442	0.0452	0.0446	0.0446	0.0443
Severance pay for retirement, awards, solidarity payments and other wage-related payments		0.0029	0.0026	0.0041	0.0047	0.0042	0.0039	0.0044	0.0039	0.0043	0.0036	0.0043	0.0044
Pensions and compensations paid by the IPDI	0.0046	0.0042	0.0046	0.0048	0.0053	0.0052	0.0053	0.0054	0.0057	0.0059	0.0052	0.0057	0.0042
Compensations paid by other social insurance institutions	0.0008	0.0049	0.0145	0.0144	0.0146	0.0140	0.0132	0.0131	0.0140	0.0128	0.0128	0.0129	0.0136
Income from contractual work	0.0086	0.0075	0.0075	0.0077	0.0081	0.0075	0.0074	0.0075	0.0074	0.0073	0.0073	0.0068	0.0126
Cadastral and self-employment income	0.0033	0.0047	0.0044	0.0040	0.0040	0.0036	0.0037	0.0032	0.0032	0.0038	0.0038	0.0042	0.0062
Income from capital, property and capital gains	0.0054	0.0040	0.0082	0.0103	0.0127	0.0122	0.0114	0.0104	0.0105	0.0110	0.0105	0.0127	0.0209
Royalties and income from property rights	0.0102	0.0125	0.0133	0.0136	0.0128	0.0139	0.0133	0.0122	0.0113	0.0095	0.0109	0.0129	0.0009

Table 4. Gini coefficient and concentration coefficients for income sources, wage earners, 1993–2005 (series A)

	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Gini coefficient													
Total	0.2815	0.2854	0.2948	0.2989	0.3022	0.3054	0.3128	0.3120	0.3138	0.3098	0.3109	0.3082	0.3078
Concentration coefficients													
Wages, wage compensations and cost reimbursements	0.2797	0.2845	0.2970	0.2999	0.3016	0.3025	0.3092	0.3096	0.3117	0.3075	0.3083	0.3030	0.3023
Fringe benefits	0.5812	0.4848	0.4849	0.4760	0.5484	0.6520	0.6571	0.6871	0.6632	0.6852	0.6966	0.7137	0.6578
Allowance for annual vacation	0.1305	0.0967	0.0635	0.0708	0.0783	0.0712	0.0869	0.0573	0.0547	0.0694	0.0611	0.0617	0.0629
Severance pay for retirement, awards, solidarity payments and other wage-related payments		0.4993	0.6029	0.6226	0.5703	0.6622	0.6570	0.6942	0.7453	0.7370	0.7655	0.6565	0.7652
Pensions and compensations paid by the IPDI	0.2087	0.2005	0.2172	0.1982	0.1965	0.1785	0.1642	0.1767	0.1787	0.1657	0.1162	0.1011	–0.0929
Compensations paid by other social insurance institutions	–0.1201	0.0122	0.0484	0.0591	0.0734	0.0931	0.1228	0.1249	0.1552	0.1554	0.1725	0.1662	0.2025
Income from contractual work	0.5202	0.5736	0.6001	0.6238	0.5798	0.6377	0.6818	0.6696	0.6968	0.6883	0.7169	0.7113	0.7778
Cadastral and self-employment income	0.2329	0.2464	0.2733	0.2830	0.3302	0.3209	0.3237	0.3985	0.4199	0.3858	0.4301	0.4284	0.4481
Income from capital, property and capital gains	0.7822	0.7624	0.7081	0.6918	0.6798	0.6777	0.7063	0.7114	0.7198	0.7353	0.7222	0.7594	0.6879
Royalties and income from property rights	0.8144	0.8256	0.8253	0.8233	0.8265	0.8432	0.8444	0.8362	0.8393	0.8208	0.8318	0.8441	0.7924

5. Income Inequality

What has been happening to income inequality? Do different data-sets reveal different trends? The analysis of income inequality at the household level shows that there have not been any major changes in income inequality in Slovenia since 1993. As a matter-of-fact, the inequality of household disposable income (measured by the Gini coefficient) was even somewhat lower in the early 2000s as compared to the early 1990s[7]. In order to explore income inequality for wage-earners, we use two data sources – source A and source B1; recall that source A is considerably more restrictive than source B1. Tables 5 and 6 show the Gini coefficient of income inequality for wage-earners based on series A and series B1, respectively. These tables also show the concentration coefficients and income shares of relevant "constituent" elements of gross income: PIT, employee social contributions and net income. Recall that there are two important differences between series A and series B1: (1) series A includes only wage-earners who have worked full-time during the year and remained at the same employer, whereas series B1 contains all wage-earners – full-time and part-time, as well as those who have not been regularly working during the given year and (2) series A contains only data on withheld PIT, whereas series B1 also contains data on final PIT paid. This also means that net income in table 5 actually refers to income after employee social contributions and withheld PIT.

The trends in income inequality – as measured by the Gini coefficient – are similar in both series; increases during the first half of the 1990s, followed by little change, except for the rather large increase in 1999. Series B1 also covers the early years of transition, which show a very large increase in the Gini coefficient of income inequality in a short span of only two years – from 0.263 in 1991 to 0.292 in 1993.

Table 5a. Income shares of gross income, withheld PIT, social contributions and "net" income, series A

Year	Income share of gross income	Income share of withheld PIT	Income share of social contributions	Income share of "net" income
1993	1.000	0.140	0.218	0.642
1994	1.000	0.142	0.205	0.654
1995	1.000	0.143	0.200	0.658
1996	1.000	0.146	0.198	0.656
1997	1.000	0.145	0.198	0.657
1998	1.000	0.147	0.202	0.652
1999	1.000	0.148	0.202	0.649
2000	1.000	0.150	0.204	0.647
2001	1.000	0.150	0.204	0.646
2002	1.000	0.151	0.204	0.645
2003	1.000	0.152	0.204	0.644
2004	1.000	0.152	0.203	0.645
2005	1.000	0.142	0.201	0.657

[7] This has been shown in Stanovnik and Čok (2008).

Table 5b. The Gini coefficient and the concentration coefficients for withheld PIT, social contributions and "net" income, series A

Year	Gini coefficient for gross income	Concentration coefficient for withheld PIT	Concentration coefficient for social contributions	Concentration coefficient for "net" income
1993	0.282	0.389	0.279	0.259
1994	0.285	0.464	0.282	0.248
1995	0.295	0.472	0.293	0.257
1996	0.299	0.476	0.295	0.261
1997	0.302	0.480	0.297	0.265
1998	0.305	0.485	0.302	0.266
1999	0.313	0.492	0.309	0.273
2000	0.312	0.490	0.310	0.272
2001	0.314	0.491	0.312	0.273
2002	0.310	0.486	0.308	0.269
2003	0.311	0.486	0.309	0.270
2004	0.308	0.480	0.303	0.269
2005	0.308	0.514	0.304	0.264

The Gini coefficient for series B1 is consistently higher than the Gini coefficient for series A, due to the fact that the population of wage-earners in series B1 is more heterogeneous and includes not only wage earners working part-time, but also wage-earners who have not worked the whole year. Both series seem to have peaked in 1999, with the series A even experiencing a very mild downward trend since 1999, whereas the series B1 has not yet demonstrated any clear upward or downward trend, as seen from figure 2. However, we must reiterate that the series B1 is based on a (admittedly large!) sample, and that we do not provide standard errors of these estimates.

Table 6a. Income shares of gross income, PIT, social contributions and net income, series B1

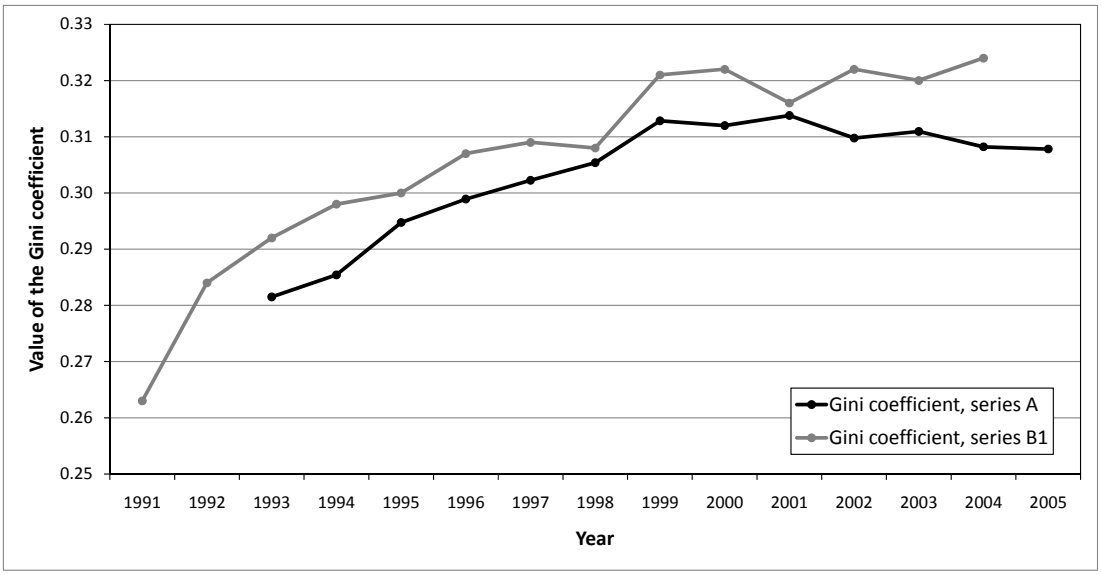
Year	Income share of gross income	Income share of PIT	Income share of social contributions	Income share of net income
1991	1.000	0.149	0.229	0.622
1992	1.000	0.147	0.226	0.627
1993	1.000	0.148	0.217	0.635
1994	1.000	0.139	0.203	0.658
1995	1.000	0.142	0.197	0.661
1996	1.000	0.144	0.196	0.660
1997	1.000	0.144	0.196	0.661
1998	1.000	0.141	0.200	0.660
1999	1.000	0.143	0.201	0.656
2000	1.000	0.143	0.201	0.656
2001	1.000	0.141	0.202	0.656
2002	1.000	0.144	0.202	0.654
2003	1.000	0.143	0.202	0.655
2004	1.000	0.145	0.201	0.654

Table 6b. The Gini coefficient and the concentration coefficients for PIT, social contributions and net income, series B1

Year	Gini coefficient for gross income	Concentration coefficient for PIT	Concentration coefficient for social contributions	Concentration coefficient for net income
1991	0.263	0.336	0.258	0.247
1992	0.284	0.369	0.281	0.265
1993	0.292	0.382	0.292	0.271
1994	0.298	0.490	0.298	0.257
1995	0.300	0.492	0.300	0.259
1996	0.307	0.503	0.306	0.265
1997	0.309	0.509	0.306	0.267
1998	0.308	0.507	0.306	0.266
1999	0.321	0.533	0.319	0.275
2000	0.322	0.536	0.321	0.276
2001	0.316	0.513	0.318	0.273
2002	0.322	0.525	0.323	0.277
2003	0.320	0.511	0.318	0.279
2004	0.324	0.527	0.323	0.280

Can we "explain" the large increase in the Gini during the first years of transition? Various studies for different countries have shown that, in the early years of transition, the returns to education have increased considerably. As demonstrated by Oražem and Vodopivec (1995) and Stanovnik (1997), this also applies to Slovenia. In other words, the wage compression characteristic for the socialist years has "dissolved" during the early transition years, resulting in a large increase in the dispersion of wages.

Figure 2. Value of the Gini coefficient according to the two data sources



Could the large increase in inequality also be explained by changes in the institutional arrangements for wage-setting? Slovenia has a very strong tradition of tripartite consensus-seeking arrangements, with wage-setting being negotiated through social partners – the trade unions and employer associations, with the government stepping

in if deemed necessary. These negotiations result in documents providing guidelines for wage-setting, disbursement of fringe benefits etc. – the most important ones being social agreements and collective contracts[8]. Social agreements are general documents, covering all employees, whereas collective contracts are more specific and cover industrial branches or groups of branches. These contracts are occasionally supplemented by additional agreements on wage policy. As if this were not enough, the government frequently steps in, enacting special laws on the enforcement of these agreements. Of particular relevance is a law, enacted in mid-1995 with a long-winded title "On Enforcing the Agreement on Wage Policy and Other Payments to Employees and the Social Agreement for 1995, and the Maximum and Minimum Wage". This law actually marked the introduction of the minimum wage, which was initially set at some 40 per cent of the average wage[9].

What about PIT and its impact on the inequality of after-tax income? As seen from tables 5 and 6, the increases in inequality of net incomes of wage-earners is much less pronounced than the increase in inequality of gross incomes, due to the strong progressivity of the PIT. PIT was first introduced in 1991, but its progressivity was considerably increased in 1994, following the new PIT legislation passed in late 1993. Progressivity was further increased in 2005, due to the new PIT act passed in April 2004. These changes are clearly visible in the large increases in the PIT concentration coefficient in these years. Also to be noted is the large increase in the PIT concentration coefficient in 1999 for series B1, which is based on actual PIT paid. In May 2000 a law "On Extraordinary Decrease of Tax Liabilities" was passed, significantly reducing the PIT liability for low-income earners and thus increasing the PIT progressivity. It was applied *ex post* for 1999 and *ex ante* for 2000. We just note that this was several months before parliamentary elections.

Let us now briefly analyse the income shares accruing to income quintiles. These are presented in table 7 (for series A) and table 8 (for series B1). Though the share of gross income accruing to the bottom 20 per cent of wage earners has somewhat decreased (for both series) in the early 2000s as compared to the early 1990s, the trends in net income would certainly be different. Without trying to give too much weight to "circumstantial" evidence, we note that for series A the share of the bottom 20 per cent of wage earners has been increasing since 1999, coinciding with a steady increase in the value of the minimum wage – from 40 per cent of average wage in 1999 to 43 per cent of the average wage in 2005. There is no such trend for the share of the bottom 20 per cent in series B1; for these heterogeneous low-income wage earners the concept of minimum wage is less relevant than for full-time employees.

[8] Here one must mention the fact that not all workers are covered by collective contracts; in the private sector some 5 per cent of all employees are covered under individual wage contracts. These employees receive considerably higher wages than those employed on collective contracts.

[9] Prior to 1995, the term used to describe the minimum wage was "guaranteed wage" (zajamčena plača). Though legally prescribed, it was so low, i.e. poorly indexed, that it has lost any meaning for labour remuneration.

Table 7. Gross income shares, series A

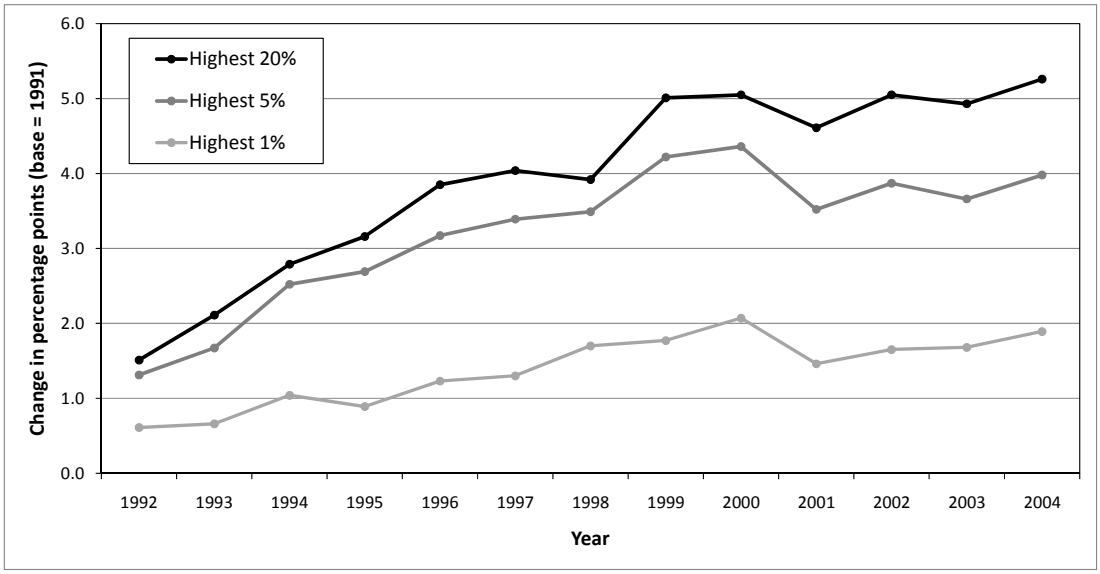
Year	Lowest 20%	Quintiles 2 – 4	Highest 20%	Highest 5%	Highest 1%
1993	9.60	52.27	38.13	14.83	4.69
1994	9.66	51.65	38.69	15.76	5.09
1995	9.33	51.40	39.27	16.05	5.08
1996	9.34	51.00	39.66	16.37	5.27
1997	9.16	51.02	39.82	16.50	5.35
1998	9.21	50.58	40.21	16.82	5.66
1999	9.01	50.18	40.81	17.24	5.84
2000	9.06	50.27	40.67	17.05	5.76
2001	9.16	49.93	40.91	17.03	5.75
2002	9.25	50.12	40.63	16.73	5.69
2003	9.23	49.90	40.87	16.75	5.70
2004	9.42	49.73	40.85	16.69	5.72
2005	9.44	49.79	40.77	16.63	5.81

Table 8. Gross income shares, series B1

Year	Lowest 20%	Quintiles 2 – 4	Highest 20%	Highest 5%	Highest 1%
1991	9.98	53.64	36.38	13.76	4.37
1992	9.34	52.77	37.89	15.07	4.98
1993	9.10	52.41	38.49	15.43	5.03
1994	9.01	51.82	39.17	16.28	5.41
1995	9.09	51.37	39.54	16.45	5.26
1996	9.06	50.71	40.23	16.93	5.60
1997	9.08	50.5	40.42	17.15	5.67
1998	9.16	50.54	40.30	17.25	6.07
1999	8.86	49.75	41.39	17.98	6.14
2000	8.87	49.7	41.43	18.12	6.44
2001	9.04	49.97	40.99	17.28	5.83
2002	8.93	49.64	41.43	17.63	6.02
2003	8.85	49.84	41.31	17.42	6.05
2004	8.82	49.54	41.64	17.74	6.26

The top quintile has been increasing its share, in both series A and B1. Thus, for series A, in the 1993–2004 period the top quintile of wage earners increased their income share from 38.13 to 40.85 per cent, representing an increase of 2.73 percentage points. The increase for series B1 in the same period was from 38.49 to 41.64 – an increase of 3.15 percentage points. As shown in figure 3 (which depicts data from series B1), most of this increase is actually picked up by the top 5 per cent of wage-earners. Proceeding yet further, one observes that the top 1 per cent of wage-earners have received a disproportionate share of the increase accruing to the top 5 per cent.

Figure 3. Increases in income shares at the top of the income distribution, series B1



6. Concluding Remarks

Our analysis was focused on income inequality of wage earners. Of course, such an analysis is partial in that it does not cover incomes of other labour active persons (such as the self-employed). To provide a final verdict on what has been happening with income inequality, the analysis of incomes at the household level would be relevant, using household current disposable income as the income measure. In spite of these limitations, several important conclusions do emerge. Income inequality of wage-earners (based on the Gini coefficient) sharply increased in the first years of transition, followed by more modest increases up to 1999. It seems that for full-time wage-earners (series A) income inequality was on a mild downward sloping trend since 1999. As for the more heterogeneous group of all wage earners (series B1), it appears that income inequality has levelled-off since 1999. We would not want to speculate on what might happen in the future.

An analysis of the income shares across income quintiles and percentiles shows that much action has been going on not at the top, but at the very top of the income distribution, i.e. the top 5 per cent and top 1 per cent of wage earners. In other words, the increasing share of income accruing to the top 20 per cent of wage-earners has – to a large degree – been picked up by the top 5 per cent and top 1 per cent of wage earners. Though the bottom quintile, i.e. the lowest 20 per cent of wage earners were receiving a somewhat lower share of gross income in the 2000s as compared to the beginning of transition (year 1991), due to increased progressivity of PIT during the 1990s and 2000s, their share in net income has – if anything – increased.

We have not presented any results concerning wage-earners in the public and private sector. Here, one is reminded of the fractal nature of the increase in income inequality, in that this increase is observable even when one considers smaller groups. Thus, the public and private sector display similar trends in income inequality, though income inequality of wage-earners in the public sector is smaller.

7. References

Atkinson, A. B., "The Distribution of Income in Industrialized Countries", in *Income Inequality: Issues and Policy Options, a Symposium Sponsored by the Federal Reserve Bank of Kansas City*, The Federal Reserve Bank of Kansas City, Kansas City, 11-32, 1998.

Atkinson, A. B., "The Long Run Earnings Distribution in Five Countries: 'Remarkable Stability', U, V or W?", *Review of Income and Wealth*, 53, 1-24, 2007.

Blinder, A. S., "Comment" in D.B.Papadimitriou and E.N.Wolff (eds), *Poverty and Prosperity in the USA in the Late Twentieth Century,* Macmillan, Basingstroke, 1993.

Oražem, P. and M. Vodopivec, "Winners and Losers in Transition: Returns to Education, Experience and Gender in Slovenia", *World Bank Economic Review*, 9, 201-230, 1995.

Rao, V. M., "Two Decompositions of Concentration Ratio", *Journal of the Royal Statistical Society*, 132, 418-425, 1969.

Stanovnik, T., "The Returns to Education in Slovenia", *Economics of Education Review*, 16, 443-449, 1997.

Stanovnik, T. and M. Verbič, "Wage and Income Inequality in Slovenia, 1993-2002", *Post-Communist Economies*, 17, 381-397, 2005.

Stanovnik, T. and M. Čok, "The Transition Process and Changes in Income, Income Inequality and Poverty: the Case of Slovenia", mimeo, Institute for Economic Research, Ljubljana, 2008.